

Andhra Pradesh State Council of Higher Education

Notations :

- 1.Options shown in green color and with ✓ icon are correct.
- 2.Options shown in red color and with ✗ icon are incorrect.

Question Paper Name :	Chemical Engineering 17th Oct 2022 Shift 2
Duration :	120
Total Marks :	140
Display Marks:	No
Share Answer Key With Delivery Engine :	Yes
Calculator :	None
Magnifying Glass Required? :	No
Ruler Required? :	No
Eraser Required? :	No
Scratch Pad Required? :	No
Rough Sketch/Notepad Required? :	No
Protractor Required? :	No
Show Watermark on Console? :	Yes
Highlighter :	No
Auto Save on Console?	Yes
Change Font Color :	No
Change Background Color :	No
Change Theme :	No
Help Button :	No
Show Reports :	No
Show Progress Bar :	No
Is this Group for Examiner? :	No
Examiner permission :	Cant View
Show Progress Bar? :	No

Research Methodology

Section Id :	549470320
Section Number :	1
Mandatory or Optional :	Mandatory
Number of Questions :	59
Section Marks :	70
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Is Section Default? :	null

Question Number : 1 Question Id : 54947022740 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What is the most advantage of giving homework to students?

Options :

1. ✘
Remain busy at home
2. ✘
Study at home
3. ✘
May be checked for their progress
4. ✔
May develop the habit of self study

Question Number : 2 Question Id : 54947022741 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Who is regarded as Father of Computers?

Options :

1. ✘ Pascal
2. ✘ Bill Gates
3. ✔ Charles Babbage
4. ✘ J. V. Neumen

Question Number : 3 Question Id : 54947022742 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

National literary Mission was established in the year _____.

Options :

1. ✘ 1996
2. ✔ 1988

3. ✖ 1999

4. ✖ 2000

Question Number : 4 Question Id : 54947022743 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Who advocated the idea of basic education in India ?

Options :

1. ✖ Dr. Zakir Hussain

2. ✖ Dr. Rajendra Prasad

3. ✔ Mahatma Gandhi

4. ✖ Rabindranath Tagore.

Question Number : 5 Question Id : 54947022744 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The best remedy of the student's problems relating with learning is _____.

Options :

1. ✘ Suggestion for hard work
2. ✘ Supervised study in study hours
3. ✘ Suggestion for private tuition
4. ✔ Diagnostic study

Question Number : 6 Question Id : 54947022745 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Traditional teaching method is known as _____.

Options :

1. ✔ Chalk and teach
2. ✘ Brainstorming

3. ✖ Group discussion

4. ✖ Demonstration

Question Number : 7 Question Id : 54947022746 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which organization initiated the MOOCs in India?

Options :

1. ✖ CSIR

2. ✖ DST

3. ✔ AICTE

4. ✖ UGC

Question Number : 8 Question Id : 54947022747 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The conceptual framework to carry out research is known as _____ of research.

Options :

1. ✘ Objectives
2. ✘ Synopsis
3. ✔ Design
4. ✘ Hypothesis

Question Number : 9 Question Id : 54947022748 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Evaluation of the depth of any research is based on

Options :

1. ✔ Objectives
2. ✘ Time period

Money spent

3. ✖

Topic

4. ✖

Question Number : 10 Question Id : 54947022749 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which technique is used when the population is fixed or restricted to sampling?

Options :

Purpose

1. ✖

Cluster

2. ✖

Systematic

3. ✔

Stratified

4. ✖

Question Number : 11 Question Id : 54947022750 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which one is considered as most comprehensive source of population data?

Options :

Sampling

1. ✘

Census

2. ✔

NSS

3. ✘

Primary Health Studies

4. ✘

Question Number : 12 Question Id : 54947022751 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The following characteristic is not covered in descriptive research.

Options :

What

1. ✘

Where

2. ✘

3. ✘ When

4. ✔ Why

Question Number : 13 Question Id : 54947022752 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The basic characteristic of experimental research is _____

Options :

1. ✔ The independent variable is manipulated

2. ✘ Goals

3. ✘ A hypothesis

4. ✘ Design

Question Number : 14 Question Id : 54947022753 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In the following aspects, which one is not considered in research ethics?

Options :

1. ✖ Respect intellectual property
2. ✖ Objectivity
3. ✔ Cut and paste
4. ✖ Honesty

Is Section Default? : null

Question Id : 54947022754 Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (15 to 21)

Read the following passage carefully and answer the questions from 15 to 21:

Throughout human history the leading causes of death have been infection and trauma. Modern medicine has scored significant victories against both, and the major causes of ill health and death are now the chronic degenerative disease, such as coronary artery disease, arthritis, cataract and cancer. These have a long latency period before symptoms appear and a diagnosis is made. It follows that the majority of apparently healthy people are pre-ill.

Many national surveys reveal that malnutrition is common in developing countries. This is not the calorie or micronutrient deficiency associated with developing nation; but multiple micronutrients depletion, usually combined with calorific balance or excess. The incidence and severity of Type B malnutrition will be shown to be worse if newer micronutrients groups such as the essential fatty acids and flavonoids are included in the surveys.

However, the pharmaceutical model has also created an unhealthy dependency culture, in which relatively few of us accept responsibility for maintaining our own health. Instead, we have handed over this responsibility to health professional who knows very little about health maintenance or disease prevention.

Based on pharmaceutical thinking, most intervention studies have attempted to measure the impact of a single micronutrient on the incidence of disease. The classical approach says that if you give a compound formula to test subjects and obtain positive results, you cannot know which ingredient is exerting the benefit, so you must test each ingredient individually.

So do we need to analyze each individual's nutritional status and then tailor a formula specifically for him or her? While we do not have the resources to analyze millions of individual cases and there is no need to do so. The vast majority of people are consuming suboptimal amounts of most micronutrients and most of the micronutrients concerned are very safe. Accordingly, a comprehensive and universal program of micronutrient support is probably the most cost-effective and safest way of improving the general health of the nation.

Sub questions

Question Number : 15 Question Id : 54947022755 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Type B malnutrition will be worse if

Options :

1. ✘
Micronutrients groups are included
2. ✔
Fatty acids and flavonoids are included
3. ✘
Both Micronutrients groups and Fatty acids and flavonoids are included
4. ✘
Fatty acids added

Question Number : 16 Question Id : 54947022756 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What is the process to know which ingredient is exerting the benefit?

Options :

1. ✘
Give compound formula to test subjects
2. ✔
Test each ingredient individually

3. ✘ Study the impact of single micronutrients

4. ✘ None of these

Question Number : 17 Question Id : 54947022757 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The Pharmaceutical model created

Options :

1. ✘ Business improvement

2. ✘ Nutritional status

3. ✔ Most unhealthy dependency culture

4. ✘ None of these

Question Number : 18 Question Id : 54947022758 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What is required to improve general health of the nation?

Options :

1. ✘ A comprehensive program
2. ✘ Universal program of micronutrient support system
3. ✔ All options
4. ✘ Give money to households

Question Number : 19 Question Id : 54947022759 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What does classical approach say to measure the impact of a single micronutrient on the incidence of disease?

Options :

1. ✔ You must test each ingredient individually
2. ✘ Those who know very little about health maintenance or disease prevention

A diagnosis is made

3. ✖

Test all the aspects at a time

4. ✖

Question Number : 20 Question Id : 54947022760 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Malnutrition is common in _____.

Options :

Western countries

1. ✖

South Asian countries

2. ✖

East Asian countries

3. ✖

Developing countries

4. ✔

Question Number : 21 Question Id : 54947022761 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Micronutrient support is

Options :

Most cost-effective

1. ✘

Safest

2. ✘

Both cost-effective and safest

3. ✔

Not desirable

4. ✘

Is Section Default? :

null

Question Number : 22 Question Id : 54947022762 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Encoding refers to _____.

Options :

Creating disturbance

1. ✘

Referring the message

2. ✘

3. ✓ With the assistance of symbols to express an idea

4. ✘ To interpret a message

Question Number : 23 Question Id : 54947022763 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In the progress of two- way communication, the sender is at one end while the _____ is at the other end

Options :

1. ✓ Receiver

2. ✘ Message

3. ✘ Transform

4. ✘ Make ready

Question Number : 24 Question Id : 54947022764 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What type of communication is being followed in Video conferencing?

Options :

1. ✘ Only visual
2. ✘ Two way visual
3. ✔ Two way Audio-visual
4. ✘ One way audio- visual

Question Number : 25 Question Id : 54947022765 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In the communication, conversation comes under the category of _____.

Options :

1. ✘ Non- verbal
2. ✔ Verbal

Drafted

3. ✖

Facial

4. ✖

Question Number : 26 Question Id : 54947022766 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In the following, which one is considered as semantic barrier of communication?

Options :

Attention of the receiver is diverted

1. ✖

Humming

2. ✖

Signal is lost before reaching the receiver

3. ✖

Receiver is not able to understand the meaning of the message

4. ✔

Question Number : 27 Question Id : 54947022767 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

It is desirable to start the class room communication with _____.

Options :

1. ✘ Commands
2. ✔ Narration
3. ✘ Authority
4. ✘ Variability

Question Number : 28 Question Id : 54947022768 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In the following, which agency in India is announcing the central government programs and policies?

Options :

1. ✘ PTI
2. ✘ AIR

3. ✓ PIB

4. ✗ UTI

Question Number : 29 Question Id : 54947022769 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Who is considered as father of reasoning?

Options :

1. ✓ Aristotle

2. ✗ Plato

3. ✗ Rossow

4. ✗ Mantesquo

Question Number : 30 Question Id : 54947022770 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Find out the missing element in the following series: ABD, EFH, IJL, MNP and QRT.

Options :

1. ✘ ZXB

2. ✘ XYZ

3. ✘ WXY

4. ✔ UVX

Question Number : 31 Question Id : 54947022771 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Find out the wrong number in the following number series: 583, 643, 800 and 691.

Options :

1. ✘ 583

2. ✘ 643

3. ✓ 800

4. ✘ 691

Question Number : 32 Question Id : 54947022772 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

For example, in certain language, CLASS is written as DMBTT. What will be the code for BLUE?

Options :

1. ✘ DMVG

2. ✓ CMVF

3. ✘ CNWH

4. ✘ DNWG

Question Number : 33 Question Id : 54947022773 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In the following, which is the largest amongst $\frac{5}{8}$, $\frac{2}{3}$, $\frac{7}{9}$, $\frac{3}{5}$?

Options :

1. ✘ $\frac{5}{8}$

2. ✘ $\frac{2}{3}$

3. ✘ $\frac{3}{5}$

4. ✔ $\frac{7}{9}$

Question Number : 34 Question Id : 54947022774 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Suppose the length and breadth of a rectangle are in the ratio 3:1. If the breadth is 7 cm, then the length of the rectangle should be _____.

Options :

1. ✔ 21 cm

2. ✘ 18 cm

16 cm

3. ✘

14 cm

4. ✘

Question Number : 35 Question Id : 54947022775 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If the average of the 12 numbers is 15. Suppose a number 41 is also included, then what will be the average of these 13 numbers?

Options :

16

1. ✘

18

2. ✘

19

3. ✘

17

4. ✔

Question Number : 36 Question Id : 54947022776 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

‘ Should India make efforts to exploit renewable energy to fulfill its energy requirements’?

I. Yes, most of the non- renewable sources of using at present are exhaustible.

II. No, exploiting renewable energy requires a huge investment and India is not in a position to invest that much amount of money.

Options :

Only argument I is strong

1. ✓

Only argument II is strong

2. ✗

Either I or II is strong

3. ✗

Neither I nor II is strong

4. ✗

Question Number : 37 Question Id : 54947022777 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Induction reasoning consists the following.

Options :

Starts with a general idea and reaches to specific conclusion

1. ✘

'If' and 'then' statements are figured

2. ✘

Drawing a general conclusion from a set of specific observations

3. ✔

'Top -down' thinking

4. ✘

Question Number : 38 Question Id : 54947022778 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Deduction reasoning involves

Options :

Conclusions are drawn from a set of specific observations

1. ✘

It quick way to make decisions

2. ✘

' Bottom- up' logic

3. ✘

Moving from general to the specific

4. ✓

Question Number : 39 Question Id : 54947022779 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Flow: River:: Stagnant : ?

Options :

Stream

1. ✘

Rain

2. ✘

Pool

3. ✓

Canal

4. ✘

Question Number : 40 Question Id : 54947022780 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In Indian logic 'Anumana' refers to _____.

Options :

1. ✘ Perception

2. ✔ Inference

3. ✘ Implication

4. ✘ Comparison

Question Number : 41 Question Id : 54947022781 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What is the meaning of 'Anupalabdhi'?

Options :

1. ✘ Postulation

2. ✘ Verbal testing

3. ✔ Non-apprehension

Inference

4. ✘

Question Number : 42 Question Id : 54947022782 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which one of the following 'Hetvabhasa' is associated in the argument " sound is eternal because it is caused"?

Options :

Viruddha or contradictory

1. ✔

Satpratipaksa or inferentially contradicted

2. ✘

Sandyasama or the unproved

3. ✘

Badhita or non- inferentially contradicted

4. ✘

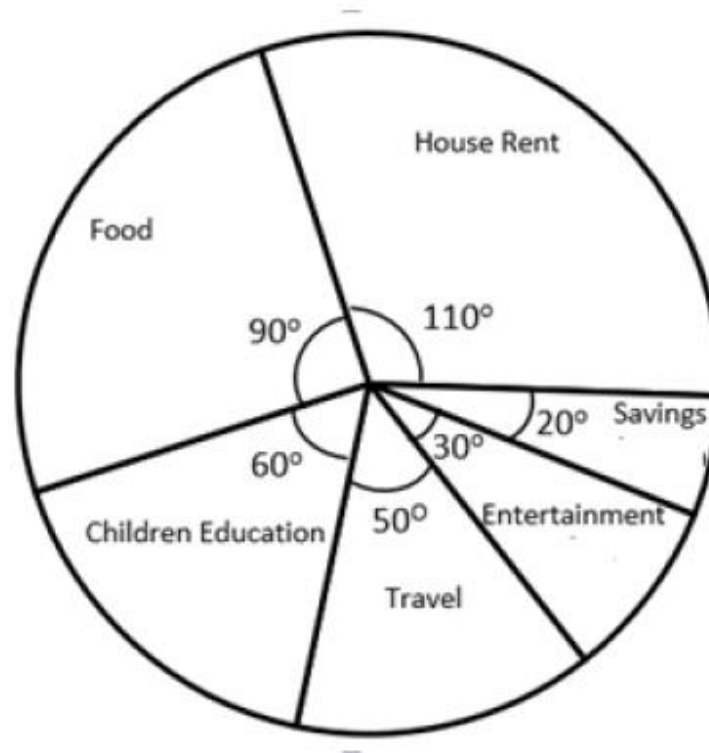
Is Section Default? :

null

Question Id : 54947022783 Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Question Numbers : (43 to 45)

Note:

Study the following Pie-chart carefully and answer the questions 43 – 45. It gives data on how the monthly income of a person is allocated to different heads.



Sub questions

Question Number : 43 Question Id : 54947022784 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If the house rent paid in a month is Rs.16500, then the amount allocated on travel in that month, in rupees, is

Options :

1. ✘ 6500

2. ✔ 7500

3. ✘ 8500

4. ✘ 9500

Question Number : 44 Question Id : 54947022785 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If the amount spent in a month on travel is Rs 8000, then total income in that month is

Options :

1. ✘ 60,600

2. ✔ 57,600

3. ✘ 54,400

57,000

4. ✖

Question Number : 45 Question Id : 54947022786 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If the total income in a month is Rs. 54,000, then the difference in the amounts spent on food and travel in that month, in rupees, is

Options :

6000

1. ✔

7500

2. ✖

9000

3. ✖

10500

4. ✖

Is Section Default? : null

Question Id : 54947022787 Sub Question Shuffling Allowed : Yes Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (46 to 49)

Note:

Study the following Table carefully and answer the questions from 46 to 49. It gives data on marks obtained by students in different subjects during 2007-2010.

Year	English		Maths		Science		Social Science	
	High.	Ave.	High.	Ave.	High.	Ave.	High.	Ave.
2007	80	70	94	60	89	70	65	55
2008	82	65	85	62	95	64	66	58
2009	71	56	92	68	97	68	68	48
2010	75	52	91	64	92	75	77	58

Sub questions

Question Number : 46 Question Id : 54947022788 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What is the overall average of marks in the four subjects in the year 2009?

Options :

1. ✖ 63

2. ✖ 64

3. ✘ 65

4. ✔ 60

Question Number : 47 Question Id : 54947022789 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Suppose that there were 40 students in science in the year 2009, how much total marks did they receive when combined together?

Options :

1. ✘ 2800

2. ✔ 2720

3. ✘ 2560

4. ✘ 3000

Question Number : 48 Question Id : 54947022790 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In which year, the difference between the highest and the average marks in Maths was maximum?

Options :

1. ✘ 2009

2. ✘ 2010

3. ✔ 2007

4. ✘ 2008

Question Number : 49 Question Id : 54947022791 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In which year, the difference between the highest and the average marks in social sciences was least ?

Options :

1. ✘ 2009

2. ✘ 2010

3. ✘ 2007

4. ✔ 2008

Is Section Default? : null

Question Number : 50 Question Id : 54947022792 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In the following acronyms, data is transferred securely across the world wide web.

Options :

1. ✘ HTTP

2. ✔ HTTPS

3. ✘ POP

4. ✘ IMAP

Question Number : 51 Question Id : 54947022793 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which software is needed to create slideshows?

Options :

1. ✘ Paint
2. ✘ Microsoft Word
3. ✘ Windows X P
4. ✔ Micro Soft Power Point

Question Number : 52 Question Id : 54947022794 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Joystick _____ device.

Options :

1. ✔ Input
2. ✘ Output

3. ✖ Storage

4. ✖ Network

Question Number : 53 Question Id : 54947022795 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Python is _____.

Options :

1. ✖ An operating system

2. ✔ Programming Language

3. ✖ An application program

4. ✖ A compiler

Question Number : 54 Question Id : 54947022796 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Speed of internet is measured in _____.

Options :

1. ✘ GHZ
2. ✔ GBPS
3. ✘ GB
4. ✘ DPI

Question Number : 55 Question Id : 54947022797 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

VIDWAN scheme of MHRD is aimed at _____.

Options :

1. ✔ Creating a database to national research network
2. ✘ Making available e-resources

3. ✖ Promoting entrepreneurship among faculty

4. ✖ Awarding National professorship to faculty

Question Number : 56 Question Id : 54947022798 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The UGC portal ' e-SARTS is for _____.

Options :

1. ✖ Special Assistance for Research in Technology and Sciences

2. ✖ Special Assistance for Research and Training in Sciences

3. ✖ Support for Academic and Research Training in Social Sciences

4. ✔ Scholarship – Fellowship Award Registration Tracking System

Question Number : 57 Question Id : 54947022799 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In the following millennium goals , which one is not considered?

Options :

Achieve Universal Primary education

1. ✘

Ensure healthy lives and promote well being for all at all ages

2. ✔

Ensure environmental sustainability

3. ✘

Eradicate extreme poverty and hunger

4. ✘

Question Number : 58 Question Id : 54947022800 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The sustainable goals proposed by the United Nations will be achieved by the end of year.

Options :

2045

1. ✘

2040

2. ✘

3. ✘ 2035

4. ✔ 2030

Question Number : 59 Question Id : 54947022801 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What is the most adverse consequence of modern agriculture ?

Options :

1. ✘ Decrease in animals and their natural habitats

2. ✔ Water pollution due to usage of chemical fertilizers and pesticides

3. ✘ Soil erosion

4. ✘ Employment opportunities increase

Question Number : 60 Question Id : 54947022802 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In the following, which gas is occurring abundantly in the air naturally?

Options :

Water vapor

1. ✘

Carbon dioxide

2. ✘

Nitrogen

3. ✔

Oxygen

4. ✘

Question Number : 61 Question Id : 54947022803 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In India, the first nuclear reactor was set up at _____.

Options :

Bombay

1. ✔

Kalpakam

2. ✘

Hyderabad

3. ✖

Tarapur

4. ✖

Question Number : 62 Question Id : 54947022804 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In the following , which one is not considered as natural disaster ?

Options :

Cyclone

1. ✖

Earthquake

2. ✖

Tsunami

3. ✖

Short circuit fire

4. ✔

Question Number : 63 Question Id : 54947022805 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The species whose population has been reduced considerably and is at the verge of extinction, is called as _____ species.

Options :

1. ✘ Rare
2. ✔ Endangered
3. ✘ Vulnerable
4. ✘ Indeterminate

Question Number : 64 Question Id : 54947022806 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In the following traditional Universities, which one is not established in the year 1857?

Options :

1. ✘ Bombay
2. ✔ Delhi

Calcutta

3. ✘

Madras

4. ✘

Question Number : 65 Question Id : 54947022807 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which organization is established in India to promote, review, encourage, assist, and coordinate social science research

Options :

NCAR

1. ✘

NCERT

2. ✘

CSIR

3. ✘

ICSSR

4. ✔

Question Number : 66 Question Id : 54947022808 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In which year the first Open University in India was established?

Options :

1. ✘ 1986
2. ✘ 1980
3. ✔ 1982
4. ✘ 1985

Question Number : 67 Question Id : 54947022809 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The NCTE established in India to strengthen _____.

Options :

1. ✔ Teacher education
2. ✘ Technical education

Computer education

3. ✖

Medical education

4. ✖

Question Number : 68 Question Id : 54947022810 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What is the purpose of establishing the National Skills qualification framework in the country ?

Options :

Technology development

1. ✖

Social development

2. ✖

To develop competencies at different levels

3. ✔

Rural development

4. ✖

Question Number : 69 Question Id : 54947022811 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What is the main purpose of establishing National program for Technology Enhanced Learning (NPTEL) by the MHRD?

Options :

To promote Engineering education

1. ✓

To promote higher education

2. ✘

To promote technology in agriculture

3. ✘

To develop pollution free technologies

4. ✘

Question Number : 70 Question Id : 54947022812 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

What is the explicit objective of value education?

Options :

To inculcate economic values

1. ✘

To inculcate political values

2. ✘

To inculcate cultural values

3. ✘

To inculcate moral values

4. ✔

Chemical Engineering

Section Id :	549470321
Section Number :	2
Mandatory or Optional :	Mandatory
Number of Questions :	70
Section Marks :	70
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Is Section Default? :	null

Question Number : 71 Question Id : 54947022813 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The Newton Raphson iteration $x_{n+1} = \frac{x_n}{2} + \frac{3}{2x_n}$ can be used to solve which of the following equation?

Options :

1. ✘ $x^3 = 3$

2. ✘ $x^2 = 2$

3. ✘ $x^3 = 2$

4. ✔ $x^2 = 3$

Question Number : 72 Question Id : 54947022814 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If a random variable X follows the Poisson's distribution with mean 2, then $P(X \geq 2)$ is

Options :

1. ✘ $1 - 2e^{-2}$

2. ✔ $1 - 3e^{-2}$

3. ✘ $2e^{-2}$

4. ✘ $3e^{-2}$

Question Number : 73 Question Id : 54947022815 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $[1 \ 0 \ -1]^T$ is an Eigen vector of the matrix $\begin{bmatrix} 1 & -1 & 0 \\ -1 & 2 & -1 \\ 0 & -1 & 1 \end{bmatrix}$ then the corresponding Eigen value is

Options :

1. ✘ 5

2. ✘ 3

3. ✘ 2

4. ✔ 1

Question Number : 74 Question Id : 54947022816 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The greatest rate of increase of $\phi = x y z^2$ at the point $(0, 1, 2)$ is

Options :

1. ✘ 0

2. ✘ 1

3. ✘ 2

4. ✔ 4

Question Number : 75 Question Id : 54947022817 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following is the particular integral of $\frac{d^2y}{dx^2} - y = xe^x$.

Options :

1. ✘ $\frac{1}{2}e^x(x^2 - x)$

2. ✘ $\frac{1}{2}e^x(x^2 + x)$

3. ✔ $\frac{1}{4}e^x(x^2 - x)$

4. ✘ $\frac{1}{4}e^x(x^2 + x)$

Question Number : 76 Question Id : 54947022818 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If $|z|=1$ and $z \neq \pm 1$ then all the values of $\frac{z}{1-z^2}$ lies on

Options :

1. ✘ $|z| = \sqrt{2}$
2. ✔ the Y-axis
3. ✘ the X-axis
4. ✘ a line not passing through the origin

Question Number : 77 Question Id : 54947022819 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which stream will prevent accumulation of inert in the recycle stream?

Options :

1. ✔ Purge
2. ✘ Bypass

3. ✖ Recycle

4. ✖ Fresh Feed

Question Number : 78 Question Id : 54947022820 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A thermocouple senses temperature based on

Options :

1. ✖ Nernst effect

2. ✔ Seebeck effect

3. ✖ Maxwell effect

4. ✖ Peltier effect

Question Number : 79 Question Id : 54947022821 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The work index in Bond's law for crushing of solids has the following dimensions

Options :

1. ✖ kW/ton

2. ✓ kWh/ton

3. ✗ kW ton

4. ✗ No units

Question Number : 80 Question Id : 54947022822 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

When some liquid nitrogen spills on the floor in a laboratory, the droplets move briskly that they appear to be dancing before they disappear. This phenomenon

Options :

1. ✗ is related to pool boiling

2. ✓ is related to film boiling

3. ✗ is related to nucleate boiling

4. ✗ is not related to boiling

Question Number : 81 Question Id : 54947022823 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A pipe of outside diameter 20 mm is to be insulated with asbestos which has a mean thermal conductivity of 0.5 w/m K. The local coefficient of convective heat to the surrounding is 10 w/m² C. Find the critical radius of insulation for optimum heat transfer from pipe?

Options :

1. ✘ 20 mm
2. ✘ 30 mm
3. ✔ 50 mm
4. ✘ 60 mm

Question Number : 82 Question Id : 54947022824 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Consider a duct of square cross section of side 'b', the hydraulic radius is given by

Options :

1. ✘ $b/8$
2. ✔ $b/4$
3. ✘ $b/2$

4. ✖ b

Question Number : 83 Question Id : 54947022825 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

When a multistage tray tower uses a minimum reflux ratio, it implies

Options :

1. ✖ infinite trays and maximum reboiler heat load
2. ✔ infinite trays and minimum reboiler heat load
3. ✖ minimum trays and minimum reboiler heat load
4. ✖ minimum trays and maximum reboiler heat load

Question Number : 84 Question Id : 54947022826 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The sequence in which three CSTR's of volume 5,10,15 m³ are connected in series to obtain the maximum production in a second order irreversible reaction is

Options :

1. ✖ 5,10,15
2. ✔ 15,10,5

3. ✖ 10,5,15

4. ✖ 10,15,5

Question Number : 85 Question Id : 54947022827 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

According to principle of increase of entropy, which is true

Options :

1. ✖ $\Delta S (\text{system}) \geq 0$

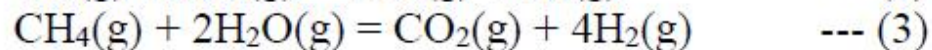
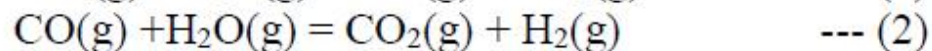
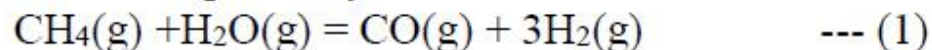
2. ✔ $\Delta S (\text{total}) \geq 0$

3. ✖ $\Delta S (\text{surroundings}) \geq 0$

4. ✖ $\Delta S (\text{system}) > 0$

Question Number : 86 Question Id : 54947022828 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

At a given temperature K_1, K_2 and K_3 are the equilibrium constants for the following reactions 1,2,3 respectively:



Then the K_1, K_2 and K_3 are related as

Options :

1. ✘ $K_3 = (K_1 K_2)^{0.5}$
2. ✘ $K_3 = K_1 + K_2$
3. ✔ $K_3 = K_1 K_2$
4. ✘ $K_3 = (K_1 K_2)^2$

Question Number : 87 Question Id : 54947022829 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The operation of a Rotameter is based on

Options :

1. ✔ Variable flow area
2. ✘ rotation of a turbine

3. ✘ pressure at stagnation point

4. ✘ pressure drop across nozzle

Question Number : 88 Question Id : 54947022830 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Naphthenes are chemically

Options :

1. ✘ Alkynes

2. ✘ Alkenes

3. ✘ Branched alkanes

4. ✔ Cycloalkanes

Question Number : 89 Question Id : 54947022831 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Flooding in a column results due to

Options :

1. ✘ Low pressure drop

2. ✓ high pressure drop

3. ✘ high temperature

4. ✘ low velocity of liquid

Question Number : 90 Question Id : 54947022832 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following is the correct sequence of equipment for size reduction of solids?

Options :

1. ✘ Fluid energy mill followed by jaw crusher followed by hammer mill

2. ✓ Jaw crusher followed by hammer mill followed by fluid energy mill

3. ✘ Hammer mill followed by jaw crusher followed by fluid energy mill

4. ✘ Fluid energy mill followed by hammer mill followed by jaw crusher

Question Number : 91 Question Id : 54947022833 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which one of the following statement is true?

Options :

1. ✘ Heat can be completely converted in to work
2. ✘ Work can be completely converted in to heat
3. ✔ The efficiency of heat engine increases as the temperature of the heat source is increased while keeping the heat sink temperature fixed
4. ✘ A cyclic process can be devised whose sole effect is to transfer heat from a lower temperature to a high temperature

Question Number : 92 Question Id : 54947022834 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Economy of evaporators used for concentrating NaCl solution is

Options :

1. ✘
$$\frac{\text{Kg of concentrated NaCl solution produced}}{\text{Kg of steam supplied}}$$

2. ✘
$$\frac{\text{Kg of steam supplied}}{\text{Kg of NaCl solution fed}}$$

3. ✔
$$\frac{\text{Kg of water vapourised}}{\text{Kg of steam supplied}}$$

4. ✖
$$\frac{\text{Kg of NaCl solution fed}}{\text{Kg of water vapourised}}$$

Question Number : 93 Question Id : 54947022835 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The controlled variable in exothermic CSTR is

Options :

1. ✖ Temperature of feed
2. ✔ temperature inside the reactor
3. ✖ Coolant flow rate
4. ✖ heat input

Question Number : 94 Question Id : 54947022836 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Pure A in gas phase enters a reactor. 50% of A is converted to B through the reaction $A \rightarrow 3 B$. The mole fraction of A in exit stream is ----

Options :

1. ✖ $1/2$

2. ✘ $1/3$

3. ✔ $1/4$

4. ✘ $1/5$

Question Number : 95 Question Id : 54947022837 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Mass transfer from a single drop to surrounding still air by molecular diffusion is given by

Options :

1. ✘ $N_{St} = 2$

2. ✔ $N_{Sh} = 2$

3. ✘ $N_{Sc} = 2$

4. ✘ $N_{Re} = 2$

Question Number : 96 Question Id : 54947022838 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Consider a first order catalytic reaction in a porous catalyst pellet. Given R- characteristic length, D_e - Effective diffusivity, k_c – mass transfer coefficient, k_1 - rate constant based on volume of the catalyst pellet, C_s - concentration of reactant on catalyst pellet surface. The Thiele modulus is

Options :

1. ✘ $\frac{k_c R}{D_e}$

2. ✔ $R \sqrt{\frac{k_1}{D_e}}$

3. ✘ $R \sqrt{\frac{k_1 C_s}{D_e}}$

4. ✘ $R \sqrt{\frac{D_e}{k_1}}$

Question Number : 97 Question Id : 54947022839 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Hot wire anemometer is used for the measurement of

Options :

1. ✘ Composition
2. ✔ Flow
3. ✘ Pressure
4. ✘ Temperature

Question Number : 98 Question Id : 54947022840 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The overall order of the reaction for which rate constant has units of $(\text{mol/lit})^{-3/2} \text{ s}^{-1}$ is

Options :

1. ✘ $-3/2$
2. ✘ $1/2$
3. ✘ $3/2$
4. ✔ $5/2$

Question Number : 99 Question Id : 54947022841 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

During Joule –Thomson expansion of gases

Options :

1. ✘ Entropy remains constant
2. ✔ Enthalpy remains constant
3. ✘ Temperature remains constant
4. ✘ Pressure remains constant

Question Number : 100 Question Id : 54947022842 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In a manufacturing industry, break-even point occurs when

Options :

1. ✘ the total annual rate of production equals the assigned value
2. ✔ the total annual product cost equals the total annual sales
3. ✘ the annual profit equals the expected value
4. ✘ the annual sales equals the fixed costs

Question Number : 101 Question Id : 54947022843 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If hot fluid enters at 150°C and leaves at 60°C and the cold fluid enters at 30°C and leaves at 90°C , then Log Mean Temperature Difference (LMTD) for counter current flow is close to

Options :

1. ✓ 43°C
2. ✗ 55°C
3. ✗ 65°C
4. ✗ 75°C

Question Number : 102 Question Id : 54947022844 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following can change if only catalyst is changed for a reaction system?

Options :

1. ✗ Enthalpy of reaction
2. ✗ Free energy of the reaction

3. ✓ Activation energy

4. ✗ Equilibrium constant

Question Number : 103 Question Id : 54947022845 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

For Carnot refrigerator operating between 40°C and 25°C , the coefficient of performance is

Options :

1. ✗ 1.87

2. ✗ 1.67

3. ✓ 19.88

4. ✗ 39.74

Question Number : 104 Question Id : 54947022846 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Solenoid valve works like a

Options :

1. ✗ P-controller

2. ✓ On-Off controller

3. ✗ P-D controller

4. ✗ P-I-D controller

Question Number : 105 Question Id : 54947022847 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If the frictional losses in a pipe is 10m of flowing fluid (oil, density = 800kg/m^3), then the power required to overcome these losses is _____ W, if the flow rate of oil is $0.05\text{m}^3/\text{s}$.

Options :

1. ✗ 400

2. ✗ 1250

3. ✗ 2320

4. ✓ 3920

Question Number : 106 Question Id : 54947022848 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The necessary and sufficient condition for equilibrium between two phases is

Options :

1. ✘ The temperature should be same in two phases
2. ✘ The pressure should be same in two phases
3. ✘ Concentration is same in two phases
4. ✔ The chemical potential should be same in two phases

Question Number : 107 Question Id : 54947022849 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The first order liquid phase reaction $A \rightarrow P$ is to be carried out isothermally in the following ideal reactor configurations.

- (P) 1 m³ CSTR followed by a 1 m³ PFR
- (Q) 2 m³ CSTR
- (R) 1 m³ PFR followed by a 1 m³ CSTR
- (S) 1 m³ CSTR followed by a 1 m³ CSTR

The overall exit conversions X , for the above configurations P, Q, R and S, assuming identical inlet conditions and temperature, are related as

Options :

1. ✘ $X_P > X_R > X_S > X_Q$

2. ✓ $X_P = X_R > X_S > X_Q$

3. ✗ $X_P = X_S = X_Q = X_R$

4. ✗ $X_Q > X_P > X_R > X_S$

Question Number : 108 Question Id : 54947022850 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

200 mesh screen means 200 openings per

Options :

1. ✗ cm^2

2. ✗ cm

3. ✓ inch

4. ✗ inch^2

Question Number : 109 Question Id : 54947022851 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

An incompressible Newtonian fluid flows in a pipe of diameter D_1 at volumetric flow rate Q . Fluid with the same physical properties flows in another pipe of diameter $D_2 = D_1/3$ at same flow rate Q . The transition length required for achieving fully developed flow is L_1 for tube of diameter D_1 while it is L_2 for tube of diameter D_2 . Assuming steady laminar flow in both the cases, the ratio of $\frac{L_1}{L_2}$ is

Options :

1. ✘ 0.25
2. ✔ 1
3. ✘ 2
4. ✘ 4

Question Number : 110 Question Id : 54947022852 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The critical speed of ball mill depends on

Options :

1. ✘ The radius of the mill (shell) and radius of the particles
2. ✘ The radius of the mill (shell) and the density of particles

3. ✘ The radius of the balls and radius of the particles

4. ✔ The radius of the balls and the radius of the mill (Shell)

Question Number : 111 Question Id : 54947022853 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If at a point along the flow of water (density=1000kg/m³), the velocity is 10m/s, elevation is 2m above the datum and pressure is 120kPa, then the total energy at that point is _____J/kg

Options :

1. ✘ 69.7

2. ✔ 189.6

3. ✘ 212.1

4. ✘ 249.2

Question Number : 112 Question Id : 54947022854 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Slurries are more conveniently pumped by a

Options :

1. ✘ Syringe pump

2. ✓ Diaphragm pump

3. ✗ Vacuum pump

4. ✗ Gear pump

Question Number : 113 Question Id : 54947022855 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The time constant of a first order system with resistance R and capacitance C is

Options :

1. ✗ $1/RC$

2. ✗ $R+C$

3. ✗ $R-C$

4. ✓ RC

Question Number : 114 Question Id : 54947022856 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Two rods of the same material have diameters in the ratio 1:2 and lengths in the ratio 2:1. If the temperature difference between their ends is the same, the ratio of heats conducted by them is

Options :

1. ✘ 1:2
2. ✘ 2:1
3. ✔ 1:8
4. ✘ 1:4

Question Number : 115 Question Id : 54947022857 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The system exhibiting unbounded response for all bounded inputs is said to be --- system.

Options :

1. ✘ Stable
2. ✔ Unstable
3. ✘ Unsteady

4. ✘ steady

Question Number : 116 Question Id : 54947022858 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

For a fluidized bed, with the increase in expansion of the bed, up to solids carry over from the bed, the pressure drop across the bed

Options :

1. ✘ Increases rapidly

2. ✘ decreases rapidly

3. ✔ remains constant

4. ✘ first decreases and then increases

Question Number : 117 Question Id : 54947022859 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In a completely opaque medium, if 50% of incident radiation is absorbed, then which of the following statements is correct?

Options :

1. ✘ 50% transmitted

2. ✘ 25% reflected

3. ✓ 50% reflected
4. ✗ 25% transmitted

Question Number : 118 Question Id : 54947022860 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

For flow through a horizontal system, the ratio of exit pressure to inlet pressure is found to be greater than one, if

Options :

1. ✗ the system is a converging pipe line
2. ✓ the system is a diverging pipe line
3. ✗ the system is a pipe line of uniform diameter
4. ✗ the observation is not possible

Question Number : 119 Question Id : 54947022861 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

For the liquid phase reaction $A \rightarrow P$, in a series of experiments in a batch reactor, the half-life $t_{1/2}$ was found to be inversely proportional to the square root of the initial concentration of A. The order of the reaction is

Options :

1. ✓ $3/2$

2. ✗ 1

3. ✗ $+1/2$

4. ✗ $-1/2$

Question Number : 120 Question Id : 54947022862 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Time constant for U-tube manometer is given by

Options :

1. ✓ $\sqrt{L/2g}$

2. ✗ $\sqrt{2Lg}$

3. ✗ $2g\sqrt{L}$

4. ✗ $L\sqrt{2g}$

Question Number : 121 Question Id : 54947022863 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

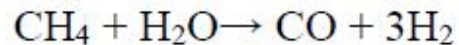
The advantage of using 1-2 shell and tube heat exchanger over a 1-1 shell and tube heat exchanger is

Options :

1. ✘ lower tube side pressure drop
2. ✘ lower shell side pressure drop
3. ✔ higher tube side heat transfer coefficient
4. ✘ lower tube side heat transfer coefficient

Question Number : 122 Question Id : 54947022864 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The heat of combustion of methane, carbon monoxide and hydrogen are P, Q and R respectively. For the reaction below,



The heat of reaction is given by

Options :

1. ✘ $Q+3R-P$
2. ✘ $Q+R-P$
3. ✔ $P-Q-3R$

4. ✘ P-Q-R

Question Number : 123 Question Id : 54947022865 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Oils and fats are converted to soap in a process called

Options :

1. ✘ Hydrogenation

2. ✘ Esterification

3. ✔ Saponification

4. ✘ Hydration

Question Number : 124 Question Id : 54947022866 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following method is used to produce ethylene from naphtha commercially?

Options :

1. ✘ Catalytic cracking

2. ✓ Hydrocracking
3. ✗ Pyrolysis
4. ✗ Catalytic dehydrogenation

Question Number : 125 Question Id : 54947022867 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The Exit age distribution function $E(t)$ for an ideal CSTR with average residence time, is given by

Options :

1. ✗ $e^{-t/\tau}$
2. ✓ $(e^{-t/\tau})/\tau$
3. ✗ $1 - e^{-t/\tau}$
4. ✗ $1 - 1/\tau$

Question Number : 126 Question Id : 54947022868 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Which of the following dimensionless number gives a indication of the ratio of internal (conduction) resistance to the surface (convective) resistance?

Options :

1. ✘ Fourier number
2. ✔ Biot number
3. ✘ Stanton number
4. ✘ Nusselt number

Question Number : 127 Question Id : 54947022869 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The decomposition of A into B is represented by the reversible exothermic reaction $A \rightleftharpoons B$. To achieve maximum decomposition, it is desirable to carry out the reaction

Options :

1. ✘ At high Pressure and high Temperature
2. ✘ At low Pressure and low Temperature
3. ✔ At high Pressure and low Temperature
4. ✘ At low Pressure and high Temperature

Question Number : 128 Question Id : 54947022870 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

For the same inlet and outlet temperatures of hot and cold fluids LMTD in the heat exchanger is

Options :

1. ✘ Greater for a parallel flow than for counter flow
2. ✔ Greater for a counter flow than for parallel flow
3. ✘ same for both counter flow and for parallel flow
4. ✘ maximum in parallel flow

Question Number : 129 Question Id : 54947022871 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Turnover ratio is defined as

Options :

1. ✘
$$\frac{\text{Fixed capital investment}}{\text{Average selling price of the product}}$$
2. ✔
$$\frac{\text{Gross annaul sales}}{\text{Fixed capital investment}}$$

3. ✖
$$\frac{\text{Gross annual sales}}{\text{Average selling price of the product}}$$

4. ✖
$$\frac{\text{Fixed capital investment}}{\text{Average selling price of the product}}$$

Question Number : 130 Question Id : 54947022872 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The undesirable by-product formed in manufacture urea is ---

Options :

1. ✔ Biuret

2. ✖ Ammonium carbonate

3. ✖ CO₂

4. ✖ Ammonium carbomate

Question Number : 131 Question Id : 54947022873 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The ratio of working capital to total capital investment of a chemical plant is in the range of --- percent

Options :

1. ✘ 0.1 to 1
2. ✘ 1 to 2
3. ✔ 10 to 20
4. ✘ 50 to 60

Question Number : 132 Question Id : 54947022874 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

India has no elemental sulphur deposits that can be economically exploited. In India, which one of the following industries produces elemental sulphur as byproduct

Options :

1. ✘ Coal carbonization
2. ✔ Petroleum refineries
3. ✘ Paper pulp industries
4. ✘ Iron and steel making plants

Question Number : 133 Question Id : 54947022875 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response

Time : N.A Think Time : N.A Minimum Instruction Time : 0

A binary distillation column is operating with mixed feed containing 20 mol% vapour. If the feed contains 80 mole% vapour, the change in slope of the q line is

Options :

1. ✓ 3.75
2. ✗ 1.25
3. ✗ 2.5
4. ✗ 2

Question Number : 134 Question Id : 54947022876 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The pay-back period using minimum acceptable rate of return of 20% for a project of duration 10 years is close to

Options :

1. ✓ 3 years
2. ✗ 2.5 years
3. ✗ 2 years

4. ✘ 3.5 years

Question Number : 135 Question Id : 54947022877 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The petroleum product with minimum °API is

Options :

1. ✘ Gasoline
2. ✘ High speed diesel oil
3. ✘ Kerosene
4. ✔ Furnace oil

Question Number : 136 Question Id : 54947022878 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In steam distillation of nitrobenzene (BP.210.6°C) at a total pressure of 1 atm, the boiling point of mixture is

Options :

1. ✔ less than 100°C
2. ✘ 100°C

3. ✘ between 100°C and 210.6°C

4. ✘ 210.6°C

Question Number : 137 Question Id : 54947022879 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The most widely used coagulant for removing suspended impurities from waste water is

Options :

1. ✘ Bleaching powder

2. ✘ chlorine

3. ✔ alum

4. ✘ calcium sulphate

Question Number : 138 Question Id : 54947022880 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

In an absorption column, if the absorption factor is 1.5 and the slope of equilibrium curve is 0.125, then slope of operating line is close to

Options :

1. ✘ 12
2. ✘ 1.5
3. ✘ 0.08
4. ✔ 0.19

Question Number : 139 Question Id : 54947022881 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Bode stability criterion is applicable when

Options :

1. ✘ Gain curve increases and phase curve decreases with frequency
2. ✔ Gain and phase curves both decrease continuously with frequency
3. ✘ Gain and phase curves both increase continuously with frequency
4. ✘ Gain curve decreases and phase curve increases with frequency

Question Number : 140 Question Id : 54947022882 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

On-off controller is a

Options :

1. ✓ Proportional controller with large proportional gain
2. ✗ Proportional Integral controller with large integral time
3. ✗ Proportional Derivative controller with large derivative time
4. ✗ PID controller